V. ENVIRONMENTAL IMPACT ANALYSIS
B. AIR QUALITY

1. INTRODUCTION

This section addresses the potential impacts on air quality from air pollutants generated by the proposed project. The analysis evaluates air emissions attributable to the project's construction and post-construction (e.g., operational) activities. Construction-related activities which generate various pollutants include site preparation, travel by construction workers to and from the site, delivery and hauling of construction materials to and from the site, fuel combustion by on-site construction equipment, and the application of architectural coatings and other building materials that release pollutants. Types of activities addressed in the post-construction analysis include the consumption of electricity and gas for site activity and the operation of on-road vehicles. Miscellaneous area sources are also considered in the operations analysis, including among other sources, consumer/commercial solvent usage, landscaping equipment, architectural and automotive coatings, restaurant charbroilers, and emergency generators.

2. ENVIRONMENTAL SETTING

a. Regulatory Setting

In response to longstanding concerns about air pollution, Federal, State, and local authorities adopted various rules and regulations requiring evaluation of air quality impacts of a planned project and appropriate mitigation for air pollutant emissions. The following discussion focuses on current air quality planning efforts and the responsibilities of agencies involved in these efforts. A discussion of ambient air quality standards is also provided.

(1) Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementation of the Federal Clean Air Act (CAA). The CAA was first enacted in 1955 and amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, 1990, and 1997). The CAA establishes Federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: (1) Ozone

(O_3); (2) Nitrogen Dioxide (NO_2); (3) Sulfur Dioxide (SO_2); (4) Particulate Matter (PM_{10}) (5) Carbon Monoxide (CO); and (6) Lead (Pb). The NAAQS were amended in July 1997 to include an additional standard for ozone and to adopt a NAAQS for fine particulates ($PM_{2.5}$). Table 5 on page 225 shows the NAAQS currently in effect for criteria pollutants.

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for basins not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones.

The Cities of Long Beach and Lakewood are included in the South Coast Air Basin (Basin), which is designated as a non-attainment area for O_3 and PM_{10}. Non-attainment designations are categorized into four levels of severity based on projected attainment date and level of concentration above the standard including: moderate, serious, severe, and extreme. In addition, the Basin is classified as being in maintenance for NO_2 and CO since they are currently in attainment and measures are being taken to ensure that they do not go back into non-attainment. The Basin's attainment status with regard to each criteria pollutant is shown in Table 6 on page 227. The CAA sets certain deadlines for meeting the NAAQS within the Basin including: (1) O_3 by the year 2010; and (2) PM_{10} by the year 2006. No official determination has been made regarding the attainment status of the new O_3 and $PM_{2.5}$ standards. However, selected monitoring stations are already analyzing air samples for $PM_{2.5}$. Deadlines for meeting this standard will be set for 10 years after the region is designated as being in non-attainment by the USEPA. Table 5 on page 225 lists the criteria pollutants, along with their respective standards, health and atmospheric effects, and major sources.

(2) State

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the State. California standards tend to be more restrictive than NAAQS and are based on even greater health and welfare concerns. California also sets standards for $PM_{2.5}$, sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. The Basin does meet the California standards for sulfates, hydrogen sulfide and vinyl chloride, but does not meet

Table 5

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [a]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	0.12 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Motor vehicles.
	8 hour	—	0.08 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hour	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.25 ppm			
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm			
	24 hour	0.04 ppm	0.14 ppm		
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	—	May irritate eyes and respiratory tract. Absorbs sunlight, reducing amount of solar energy reaching the earth. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Geometric Mean	50 $\mu g/m^3$	150 $\mu g/m^3$		
	24 Hour	—	50 $\mu g/m^3$		
Particulate Matter ($PM_{2.5}$) [b]	Annual Geometric Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO_X, SO_X, organics).
	24 Hour	—	65 $\mu g/m^3$		

Table 5 (Continued)

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standard [a]	Federal Primary Standard [a]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Lead	Monthly	1.5 ug/m^3		Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction (in severe cases).	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly		1.5 ug/m^3		
Sulfates (SO_4)	24 hour	25 ug/m^3	—	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.

[a] *ppm=parts per million and µg/m^3 = micrograms per cubic meter.*

[b] *A Federal air quality standard for $PM_{2.5}$ was adopted in 1997. Presently, no methodologies for determining impacts relating to $PM_{2.5}$ have been developed. In addition, no strategies or mitigation programs for this pollutant have been developed or adopted by federal, state, or regional agencies.*

Source: California Air Resources Board, Ambient Air Quality Standards*, 2004 and the USEPA, 2004.*

the California standard for visibility reducing particles and is not expected to fully meet the visibility standard until 2010. No date for meeting the $PM_{2.5}$ standard has been established.

(3) Regional

(a) South Coast Air Quality Management District (SCAQMD)

The SCAQMD has jurisdiction over an area of 10,743 square miles consisting of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties, and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin is a subregion of the SCAQMD's jurisdiction and covers an area of 6,745 square miles. The Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. While air

Table 6

SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	National Standards	California Standards
Ozone (O_3)	Extreme	Extreme
Carbon Monoxide (CO)	Maintenance [a]	Serious
Sulfur Dioxide (SO_2)	Attainment [b]	Attainment [b]
Nitrogen Dioxide (NO_2)	Maintenance [c]	Maintenance [c]
PM_{10}	Serious	Serious
$PM_{2.5}$	Pending [d]	Pending [d]

[a] *The national standard for CO was achieved for the first time at the end of 2002 and the 2003 AQMP identifies measures necessary to ensure that it does not go back into non-attainment.*

[b] *An air basin is designated as being in attainment for a pollutant if the standard for that pollutant was not violated at any site in that air basin during a three year period.*

[c] *NO_2 and CO are classified as being in maintenance since it is currently in attainment and measures are being taken to ensure that they do not go back into non-attainment.*

[d] *Attainment status with the $PM_{2.5}$ standard will not be determined until 2004.*

Source: California Air Resources Board, 2004.

quality in this area has improved, with 2002 (the latest year for which comprehensive data are available) registering some of the lowest levels of air pollutant concentrations in decades, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources; control programs for area sources and indirect sources; a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions; transportation control measures; sufficient control strategies to achieve a five percent or more annual reduction in emissions (or 15 percent or more in a three-year period) for Reactive Organic Compounds (ROC), NO_X,[69] CO, and PM_{10}; and demonstration of compliance with the California Air Resources Board's (CARB) established reporting periods for compliance with air quality goals.

[69] *NO_X is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) emitted as by-products of the combustion process. However, since most of these chemicals eventually convert to NO_2 in the atmosphere, all NO_X emissions are conservatively reported as the criteria pollutant NO_2.*

The 1997 AQMP was amended in 1999 and resubmitted to the USEPA, which approved the amended plan in April 2000. The 1999 Amendment provides additional short-term stationary source control measures that implement portions of the 1997 Ozone State Implementation Plan's (SIP) long-term stationary source control measures. In addition, the Amendment revised the adoption and implementation schedule for the remaining 1997 Ozone SIP short-term stationary source control measures that the SCAQMD is responsible to implement. The SCAQMD updated the SIP in 2002 with respect to the adoption and implementation schedule of various PM_{10} related measures and SIP approval is expected in late 2003.[70]

The SCAQMD adopted a comprehensive AQMP update, the 2003 Air Quality Management Plan for the Basin, on August 1, 2003 (2003 AQMP). [71] The 2003 AQMP outlines the air pollution control measures needed to meet federal health-based standards for O_3 by 2010, and for PM_{10} by 2006. It also demonstrates how the federal standard for CO, achieved for the first time at the end of 2002, will be maintained. Lastly, the plan takes a preliminary look at what will be needed to achieve new and more stringent health standards for O_3 and $PM_{2.5}$. The 2003 AQMP will be forwarded to the CARB for its review. If approved by the State, it will be sent to the USEPA for its final approval.

In adopting the 2003 AQMP, the SCAQMD: (1) committed to analyzing 12 additional long-term control measures, such as requiring the electrification of all cranes at ports; (2) set a target for distributing needed long-term emission reductions between SCAQMD, CARB and USEPA; (3) assigned emission reductions to the USEPA (in the event that USEPA rejects the plan due to the assignment, the plan will drop the provision); and (4) forwarded to CARB and USEPA a list of more than 30 specific measures for consideration to further reduce emissions from on- and off-road mobile sources and consumer products. The 2003 AQMP also identifies 26 air pollution control measures to be adopted by the SCAQMD to further reduce emissions from businesses, industry and paints. It also identifies 22 measures to be adopted by CARB and the USEPA to further reduce pollution from cars, trucks, construction equipment, aircraft, ships and consumer products.

The SCAQMD also adopts rules to implement portions of the AQMP. Several of these rules may apply to construction or operation of the project. For example, Rule 403 requires the implementation of best available fugitive dust control measures during active

[70] *SCAQMD, Preview of the Proposed 2003 Air Quality Management Plan for the South Coast Air Basin, January 2003, p. i.*

[71] *SCAQMD, AQMD Websitehttp://www.aqmd.gov/news1/aqmp_adopt.htm.*

operations capable of generating fugitive dust emissions from onsite earth-moving activities, construction/ demolition activities, and construction equipment travel on paved and unpaved roads. Specific Rule 403 control requirements are included in Appendix D of this EIR.

Certain stationary sources of air pollution that may be part of the project (e.g., heaters and generators) may require permits from the SCAQMD pursuant to Rules 201, 202 and 203. Emission increases related to those sources may also be subject to SCAQMD Regulation XIII or Regulation XXX which, among other things, requires that Best Available Control Technology (BACT) be utilized to reduce pollutants and that any increases of criteria air pollutants be offset by achieving equivalent emission reductions at a facility within the Basin. Emergency equipment, however, is exempt from modeling and offset requirements (Rule 1304) and does not require a health risk assessment (Rule 1401).

In addition to the AQMP and its rules and regulations, the SCAQMD published a handbook (*CEQA Air Quality Handbook*; most recent version: November 1993) that is intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts for both land use and permitting projects. The *Handbook* provides standards, methodologies and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. A detailed discussion of the methodologies used in the analysis of air quality impacts is provided in Appendix D of this EIR.

(b) Los Angeles County Congestion Management Plan

The Congestion Management Plan (CMP) for the County of Los Angeles has been developed to meet the requirements of Section 65089 of the California Government Code. In enacting the CMP statute, the State legislature noted the increasing concern that urban congestion was impacting the economic vitality of the State and diminishing the quality of life in many communities. The CMP was created to further the following objectives:

- To link land use, transportation and air quality decisions.
- To develop a partnership among transportation decision makers to encourage appropriate transportation solutions that include all modes of travel.
- To propose transportation projects which are eligible for State gas tax funds.

Refer to Section V.L, Transportation and Circulation, for additional discussion regarding the CMP.

(c) Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development and the environment. SCAG serves as the federally designated metropolitan planning organization (MPO) for the southern California region and is the largest MPO in the United States. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the AQMP and are utilized in the preparation of air quality forecasts and consistency analysis included in the AQMP.

(4) Local Plans

The Cities of Long Beach and Lakewood have adopted General Plan Air Quality Elements to aid the greater Los Angeles region in attaining state and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. These Air Quality Elements acknowledge the inter-relationships between transportation and land use planning in meeting mobility and clean air goals. By adopting Air Quality Elements, both Cities are seeking to achieve consistency with the AQMP, RCPG and CMP.

(a) City of Long Beach General Plan Air Quality Element

Contained in the City of Long Beach General Plan Air Quality Element are numerous Goals, Policies, and Actions that are intended to improve air quality throughout the City, which are based on the following guiding principles:

1. To achieve air quality improvements in such a manner that sustains current economic development while encouraging future growth.

2. To improve the quality of life for citizens by providing greater opportunities, conveniences, and choices.

3. To reinforce local mobility goals by reducing peak-hour traffic congestion.

4. To foster behavior change through public information and education, incentives, and pricing that reflects total societal costs for administration and enforcement.

The Air Quality Element is divided into seven topical areas: Government Organization, Roles and Responsibilities; Ground Transportation; Air Transportation; Land Use; Particulate Emissions; Energy Conservation; and Education. A general goal statement for each topic expresses the general, long-range condition toward which effort is being directed. Each goal is reinforced by a series of policies that provide guidance for decision making that will advance that particular goal. Policies are then implemented through a number of actions. For the project, the following actions are applicable:

- Action 2.1.2.3—Promote the creation of, and develop incentives for, sector committees consisting of local establishments providing consumer services and goods to offer and distribute those services and goods in a manner that will reduce overall automobile travel.

- Action 2.1.3.1—Apply system management techniques specified in the City's Transportation Element, such as traffic signal synchronization or computerization, parking prohibitions, left-hand turn pockets, and recessed bus ways where appropriate to optimize existing capacity on regional corridors, and major and minor arterials.

- Action 2.1.3.6—Invest in capital improvements intended to eliminate traffic bottlenecks, such as grade separations, street widening, intersection improvements, and new or realigned roadways.

- Action 2.4.1.3—Ensure that all new development is designed and constructed to facilitate and encourage travel by carpool, vanpool, transit, bicycle, and foot.

- Action 2.4.1.10—Ensure that pedestrian walkways are safe, convenient, and aesthetically appealing, especially at major activity centers.

- Action 5.2.2—Improve the jobs/housing balance at the Southeast Los Angeles County Sub-regional level in relation to major activity centers as new development occurs.

- Action 6.1.8—Once sources of particulate pollution have been identified, the City shall pursue potential mitigation measures through private/public collaborations, or through other available means.

- Action 7.1.4—Encourage the incorporation of energy conservation features in the design of all new construction.

- Action 7.1.5—Encourage the installation of conservation devices and low energy using/water consuming appliances in new and existing development.

(b) City of Lakewood General Plan Air Quality Element

The City of Lakewood has adopted a General Plan Air Quality Element that was derived (in large part) from the Model Air Quality Element that was prepared jointly by 21 jurisdictions during the early 1990s. Many of the element's goals and policies are directed at economic efficiency and jurisdictional coordination. Others promote reduction in vehicle miles traveled (VMT) by encouraging compact development patterns and an increase in commuter average vehicle ridership (AVR). Policies applicable to the project include the following:

- Policy 3.1—Achieve a pattern of land uses that facilitates a reduction in mobile emissions through the availability of alternative transportation modes.

- Policy 4.1—Reduce particulate emissions through regulations and enforceable measures to the extent possible. Sources of particulate emissions include unpaved roads, accumulated debris on paved roads, and dirt lots.

b. Existing Air Quality Conditions

(1) Regional Air Quality

The distinctive climate of the Basin is determined primarily by its terrain and geographical location. Regional meteorology is dominated by a persistent high pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause changes in the weather patterns of the area. Warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity characterize local climatic conditions. This normally mild climatic condition is occasionally interrupted by periods of hot weather, winter storms, and hot easterly Santa Ana winds.

The Basin is an area of high air pollution potential, particularly from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds and shallow vertical atmospheric mixing. This frequently reduces

pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys and lower in the far inland areas of the Basin and adjacent desert.

Over the past 30 years, substantial progress has been made in reducing air pollution levels in southern California. The Basin previously was in non-attainment for all NAAQS, except SO_2. The Basin is now in attainment for NO_2, lead, SO_2, and CO. PM_{10} and ozone levels, while reduced substantially from their peak levels, are still far from attainment. This year has resulted in the worst smog season in seven years. For example, the Basin experienced its first Stage 1 smog episode this summer since 1998.[72] A Stage 1 episode was recorded after 4 p.m. in the central San Bernardino Mountains when ozone levels reached 0.21 parts per million, considered a very unhealthy level. Several other areas, including the Santa Clarita, San Fernando, San Gabriel and San Bernardino valleys, experienced unhealthy levels of O_3.[73] The Stage 1 episode was primarily due to an unusually strong high pressure system and resulting inversion layer that trapped smog close to the ground.

The SCAQMD published a Basin-wide air toxics study (MATES II, *Multiple Air Toxics Exposure Study*, March 2000). The MATES II study represents one of the most comprehensive air toxics studies ever conducted in an urban environment. The study determined the cancer risk from toxic air emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Basin. The study concluded that the average carcinogenic risk in the Basin is approximately 1,400 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. About 70 percent of all risk is attributed to diesel particulate emissions, about 20 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and about 10 percent of all carcinogenic risk is attributed to stationary sources (which include industries and other certain businesses such as dry cleaners and chrome plating operations).

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[72] *A Stage 1 episode is declared when ozone levels reach a level of 0.20 ppm during a 1-hour average. At that level, most people will notice some adverse effects, such as shortness of breath, and everyone is urged to avoid strenuous outdoor exercise. Those who are sensitive to smog, including children, the elderly and people with heart and lung diseases, are advised to stay indoors.*

[73] *Far inland valleys typically experience the highest ozone readings in the region because they are furthest downwind from the western portion of the Los Angeles Basin, where most air pollution originates. The fact that ozone takes time to "cook" in sunlight means that the highest concentrations occur several hours—and many miles—downwind of major sources.*

(2) Local Area Conditions

(a) Existing Pollutant Levels at Nearby Monitoring Stations

The SCAQMD maintains a network of air quality monitoring stations located throughout the Basin. As defined by the SCAQMD, the monitoring station most representative of existing air quality conditions in the project area is the South Los Angeles County Coastal Monitoring Station (also referred to herein as the Long Beach Monitoring Station), located at 3648 North Long Beach Boulevard, in the City of Long Beach, approximately two miles west of the project site. Criteria pollutants, including O_3, CO, NO_2, PM_{10}, $PM_{2.5}$, and SO_2 are monitored at this station. The most recent data available from this monitoring station encompasses the years 1998 to 2002. The data, shown in Table 7 on pages 235 and 236, show the following pollutant trends:

Ozone—The maximum 1-hour O_3 concentration recorded at the Long Beach Monitoring Station from 1998-2002 period was 0.13 ppm in 1999. During the 1998-2002 period, the CAAQS was exceeded between 0 and 3 times annually and the NAQQS was exceeded 1 time in 1999. The maximum 8-hour concentration was 0.08 and no exceedance of the NAAQS was recorded.

Carbon Monoxide—The maximum 1-hour CO concentration recorded at the Long Beach Monitoring Station during the 1998-2002 period was 10 ppm and the maximum recorded 8-hour CO concentration was 6.6 ppm. There was no exceedance of either the CAAQS or NAAQS 1-hour or 8-hour standards during this time period.

Nitrogen Dioxide—The highest concentration of NO_2 recorded at the Long Beach Monitoring Station during the period 1998-2002 was 0.16 ppm in 1998. The maximum annual arithmetic mean was 0.034 recorded in 1999. There was no NO_2 exceedance of either the CAAQS or NAAQS during this time period.

Sulfur Dioxide—The highest 1-hour, 24-hour, and annual arithmetic mean SO_2 concentrations recorded at the Long Beach Monitoring Station during the period 1998-2002 were 0.08, 0.013, and 0.003, respectively. No exceedances of the CAAQS or NAAQS were recorded during this time period.

Particulate Matter (PM_{10})—The highest PM_{10} concentration recorded at the Long Beach Monitoring Station during the period 1998-2002 was 105 micrograms per cubic

Table 7

POLLUTANT STANDARDS AND SOUTH LOS ANGELES COUNTY COASTAL MONITORING STATION (LONG BEACH) AMBIENT AIR QUALITY DATA

Pollutant/Standard	1998	1999	2000	2001	2002
Ozone (O_3)					
O_3 (1-hour)					
Maximum Concentration (ppm)	0.12	0.13	0.12	0.09	0.09
Days > CAAQS (0.09 ppm)	2	3	3	0	0
Days > NAAQS (0.12 ppm)	0	1	0	0	0
O_3 (8-hour)					
Maximum Concentration (ppm)	0.08	0.08	0.08	0.07	0.06
Days > NAAQS (0.08 ppm)	n/a	0	0	0	0
Particulate Matter (PM_{10})					
PM_{10} (24-hour)					
Maximum Concentration ($\mu g/m^3$)	69	79	105	91	74
Percent of Samples > CAAQS (50 $\mu g/m^3$)	10	22	21	17	8
Percent of Samples > NAAQS (150 $\mu g/m^3$)	0	0	0	0	0
PM_{10} (Annual Average)					
Annual Arithmetic Mean (50 $\mu g/m^3$)	32	39	38	37	37
Annual Geometric Mean (20 $\mu g/m^3$)	29	36	34	34	34
Particulate Matter ($PM_{2.5}$)					
$PM_{2.5}$ (24-hour)					
Maximum Concentration ($\mu g/m^3$)	n/a	67	82	73	63
Percent of Samples > NAAQS (65 $\mu g/m^3$)	n/a	1	1.3	0.3	0
$PM_{2.5}$ (Annual)					
Annual Arithmetic Mean (15 $\mu g/m^3$)	n/a	22	20	21	20
Carbon Monoxide (CO)					
CO (1-hour)					
Maximum Concentration (ppm)	8	7	10	6	N/A
Days > CAAQS (20 ppm)	0	0	0	0	0
Days > NAAQS (35 ppm)	0	0	0	0	0
CO (8-hour)					
Maximum Concentration (ppm)	6.6	5.4	5.7	4.7	4.6
Days > CAAQS (9.0 ppm)	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0

Table 7 (Continued)

POLLUTANT STANDARDS AND SOUTH LOS ANGELES COUNTY COASTAL MONITORING STATION (LONG BEACH) AMBIENT AIR QUALITY DATA

Pollutant/Standard	1998	1999	2000	2001	2002
Nitrogen Dioxide (NO_2)					
NO_2 (1-hour)					
Maximum Concentration (ppm)	0.16	0.15	0.14	0.12	0.13
Days > CAAQS (0.25 ppm)	0	0	0	0	0
NO_2 (Annual)					
Annual Arithmetic Mean (0.053 ppm)	0.034	0.034	0.032	0.030	0.029
Sulfur Dioxide (SO_2) [a]					
SO_2 (1-hour)					
Maximum Concentration (ppm)	0.08	0.05	0.05	0.05	N/A
Days > CAAQS (0.25 ppm)	0	0	0	0	0
SO_2 (24-hour)					
Maximum Concentration (ppm)	0.01	0.01	0.01	0.01	0.01
Days > CAAQS (0.04 ppm)	0	0	0	0	0
Days > NAAQS (0.14 ppm)	0	0	0	0	0
SO_2 (Annual)					
Annual Arithmetic Mean (0.03 ppm)	0.002	0.002	0.002	0.002	0.002

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; AAM Annual Arithmetic Mean; n/a = not available

Note: Ambient data for airborne lead is not included in this table since the Basin is currently in compliance with state and national standards for lead.

Source: SCAQMD, Air Quality Data 1998-2001 and CARB Air Quality Data 2002.

meter of air ($\mu g/m^3$) in 2000. During the 1998-2002 period, the California PM_{10} standard was exceeded between 8 and 22 percent of the time annually, with the highest number of exceedances in 1999 and the lowest number of exceedances recorded in 2002. No exceedances of the NAAQS were recorded from 1998-2002.

Fine Particulates ($PM_{2.5}$)—$PM_{2.5}$ concentrations of 67, 82, 73, and 63 $\mu g/m^3$ were recorded at the Long Beach Monitoring Station from the years 1999 to 2002, respectively. During these years the NAAQS was exceeded between 0 and 1.3 percent of the time annually. A CAAQS for $PM_{2.5}$ has not yet been set.

(b) Existing Health Risk in the Surrounding Area

Based on the MATES II Study, the project area is characterized by a risk of approximately 1,000 to 1,200 in one million due to toxic air contaminants. Approximately 90 percent of the measured risk from toxic air contaminants at the Long Beach Monitoring Station is due to mobile combustion sources (e.g., cars, trucks, trains, ships, aircraft, etc.) associated with the Port of Long Beach, I-405, I-710, I-605, SR-91, Alameda Corridor, and the Long Beach Airport. In addition, the project vicinity cancer risk of 1,000 to 1,200 in one million is approximately 14 to 29 percent lower than the average cancer risk within the Basin as a whole, which is 1,400 per million.

(c) Receptor Locations

Certain population groups are especially sensitive to air pollution and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, persons with pre-existing respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. As defined in the SCAQMD *CEQA Air Quality Handbook* (1993), a sensitive receptor to air quality is defined as any of the following land use categories: (1) long-term health care facilities; (2) rehabilitation centers; (3) convalescent centers; (4) retirement homes; (5) residences; (6) schools; (7) parks and playgrounds; (8) child care centers; and (9) athletic fields. The closest sensitive receptors are residences located to the north of Carson Street, across from the project site. The closest school is located approximately 0.6 mile northwest of the project site along Cherry Avenue (James Madison Elementary School).

3. ENVIRONMENTAL IMPACTS

a. Methodology

An analysis of the potential air quality impacts was conducted for construction and operation of the project. For each of these phases, an analysis was performed for regional emissions. The analysis also addresses local area concentrations of PM_{10}, CO, and NO_2 for construction impacts.[74] CO is the primary pollutant of concern when analyzing local traffic-related air quality impacts, and it is the only pollutant from mobile sources for which standardized modeling methodologies for estimating localized concentrations have been

[74] *While an AAQS has been established for $PM_{2.5}$, no significance thresholds have been established for evaluating potential $PM_{2.5}$ impacts. Therefore, PM_{10} is used as an indicator for potential $PM_{2.5}$ impacts.*

developed and approved by the SCAQMD. A detailed discussion of the methodologies used in the analysis of air quality impacts and the air quality modeling output files are provided in Appendix D of this EIR.

b. Significance Thresholds

Neither the City of Long Beach nor the City of Lakewood has adopted specific Citywide significance thresholds for air quality impacts. Because of the SCAQMD's regulatory role in the Basin, the SCAQMD *CEQA Air Quality Handbook* was used to reference screening criteria, significance thresholds, and analysis methodologies.

(1) Construction Emissions

The SCAQMD has promulgated daily emission thresholds for construction activities that promote or maintain regional attainment of the relevant ambient air quality standards. A project is deemed to have a significant impact on regional air quality if emissions of criteria pollutants (specified in pounds of pollutant emitted per day) related to project construction exceed the significance thresholds summarized in Table 8 on page 239.

While the SCAQMD *CEQA Air Quality Handbook* does not provide any localized thresholds, the SCAQMD currently recommends localized significance thresholds (LST) for PM_{10}, NO_2, and CO in its recently adopted document titled "*SCAQMD Localized Significance Threshold Methodology*", June 2003. Based on this guidance, the following additional significance thresholds are use in this analysis for determining potential air quality impacts from on-site construction activities.

- If the project causes an incremental increase in localized construction concentrations of 10.4 µg/m^3 for PM_{10} (24-hours), 207 µg/m^3 for NO_2 (1-hour), 11,500 µg/m^3 for CO (1-hour), or 3,674 µg/m^3 for CO (8-hours).

The SCAQMD also provides additional indicators of potential air quality impacts in Chapter 6 of the SCAQMD *CEQA Air Quality Handbook*. Whenever possible, these additional indicators should be evaluated in a quantitative analysis; otherwise a qualitative analysis is appropriate. Based on these indicators, the following additional significance thresholds are used in this analysis for determining potential construction-related air quality impacts.

Table 8

SCAQMD SIGNIFICANCE THRESHOLDS

	Project Construction (pounds per day)	Post-Construction Project Operations (pounds per day)
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_X)	100	55
Reactive Organic Compounds (ROC)	75	55
Particulate Matter (PM_{10})	150	150
Sulfur Oxides (SO_X)	150	150

Source: South Coast Air Quality Management District, CEQA Air Quality Handbook, November 1993.

- If the project emits carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million above background risk levels.

- If the project creates objectionable odors affecting a substantial number of people.

(2) Operation Emissions

The SCAQMD has promulgated daily emission thresholds for operational activities that promote or maintain regional attainment of the relevant ambient air quality standards. A project is deemed to have a significant impact on regional air quality if emissions of criteria pollutants (specified in pounds of pollutant emitted per day) related to project operation exceed the significance thresholds summarized in Table 8.

While the SCAQMD *CEQA Air Quality Handbook* does not provide any localized thresholds, the SCAQMD currently recommends localized significance thresholds (LST) for PM_{10}, NO_2, and CO in its recently adopted document titled *"SCAQMD Localized Significance Threshold Methodology"*, June 2003. Based on this guidance, the following additional significance thresholds are used in this analysis for determining potential air quality impacts from on-site stationary sources.

- If the project causes an incremental increase in localized concentrations of 2.5 µg/m^3 for PM_{10} (24-hours), 207 µg/m^3 for NO_2 (1-hour), 11,500 µg/m^3 for CO (1-hour), or 3,674 µg/m^3 for CO (8-hours) from on-site stationary sources.

The SCAQMD also provides additional indicators of potential air quality impacts in Chapter 6 of the SCAQMD *CEQA Air Quality Handbook*. Whenever possible, these additional indicators should be evaluated in a quantitative analysis; otherwise a qualitative analysis is appropriate. Based on these indicators, the following additional significance thresholds are used in this analysis for determining potential operation-related air quality impacts.

- If the project causes an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively, at an intersection or roadway within one-quarter mile of a sensitive receptor.[75]

- If the project emits carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million above background risk levels.

- If on-site hazardous materials result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.

- If the project will be occupied by sensitive individuals within one-quarter mile of existing facilities that could result in an incremental maximum individual cancer risk of 10 in one million (1×10^{-5}) or a Hazard Index of 1.0 for noncarcinogens.

- If the project creates objectionable odors affecting a substantial number of people.

- The project will not be compatible with SCAQMD and SCAG air quality polices if the project

  - Causes an increase in the frequency or severity of existing air quality violations;

  - Causes or substantially contributes to new air quality violations;

  - Delays timely attainment of air quality standards or the interim emission reductions specified in the AQMP; or

[75] *In cases where the background concentration at the intersection already exceeds the State 1-hour and 8-hour CO standards, a measurable increase of one ppm for the 1-hour standard and 0.45 ppm for the 8-hour standard is used as the significance threshold.*

- Exceeds the growth assumptions utilized in preparing the SCAQMD's AQMP.

- If the project is inconsistent with the air quality goals and policies set forth within the General Plans.

c. Project Features

All on-site heavy-duty construction equipment will be equipped with diesel particulate traps. In addition, land uses on the project site will be limited to those that do not emit high levels of potentially toxic contaminants or odors.

d. Impact Analysis

(1) Construction

(a) Regional Construction Impacts

Construction of the project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the project site. In addition, fugitive dust emissions will result from demolition and construction activities. Mobile source emissions, primarily NO_X, will result from the use of construction equipment such as bulldozers, wheeled loaders, and cranes. During the finishing phase, paving operations and the application of architectural coatings (i.e., paints) and other building materials will release reactive organic compounds. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

Emissions for the regional construction air quality analysis were compiled using the URBEMIS2002 emissions inventory model developed by the CARB. The URBEMIS2002 model separates the construction process into three stages and is consistent with staging of project construction activities. The first stage is building demolition with emissions resulting from demolition dust, debris haul truck trips, equipment exhaust, and worker commute trip exhaust. The second stage of construction is site grading with emissions resulting from soil disturbance activities (fugitive dust), soil haul truck trips, equipment exhaust, and worker commute exhaust. Emissions from the third stage of construction include equipment exhaust from building construction and asphalt paving, ROC emissions

from architectural coating and asphalt paving, and worker commute trip exhaust. The equipment mix and construction duration for each stage is detailed in Appendix D of this EIR.

The project is anticipated to be developed in sequences according to geography and land use type, where construction activities will generally consist of four phases moving from east to west across the site. The initial construction phases will focus on development of site infrastructure for commercial and housing uses. In general, as residential development occurs within the northern portion of the site, basic infrastructure to support the commercial uses (office, R&D, light industrial, retail, hotel, and aviation-related uses) will be developed within the site's southern portion. The initial development increment will generally be concentrated within the eastern portion of the site. As part of this initial development increment, construction of certain perimeter landscape improvements will also be commenced in concert with the basic project infrastructure improvements. Construction activities are expected to commence in 2005 and proceed intermittently, with completion by or before 2020.

As described in Section III, Project Description, of this EIR, PacifiCenter will be developed in phased increments (sequenced according to geography and land use type) and is anticipated to be completed by or before the year 2020. Development of the PacifiCenter project will respond to market demands. However, the project will be developed in accordance with a commercial infrastructure phasing plan that will provide commercial infrastructure in advance of market demand. Such infrastructure will include wet utilities (water, sewer, storm drainage), dry utilities (telephone, electricity, gas, cable), streets, traffic signals and signage, street lighting, sidewalks, and parkway landscaping., Using the on-site commercial infrastructure phasing plan provided in Figure 20 on page 146 of Section III, Project Description, the analysis of construction impacts associated with air quality assumes that the proposed project will be developed in four general phases which may have overlapping construction activities. As discussed in Section III, Project Description, Phase 1 construction activities are anticipated to include development of approximately 50 percent of the gross residential acreage (net of open space and parks) in the northern portion of the project site together with completion of the commercial infrastructure within the lower southeast portion of the site. Phase 2 construction activities are expected to include development of the next 50 percent of the total gross residential acreage (net of open space and parks) in the northern portion of the site together with completion of the commercial infrastructure improvements within the commercial area east of the Boeing Enclave. Phase 3 includes development of the commercial infrastructure located to the west of the Boeing Enclave. It is expected that the residential development within this phase will be the located within the westernmost area of the site proposed for residential uses. Finally, Phase 4 will include development of the commercial infrastructure within the Boeing Enclave. Refer to Appendix D for additional information

regarding the estimated construction schedule including the various stages of construction activities (e.g., demolition, site preparation, building construction) for each of the four phases of project development.

As discussed in detail in Section IV, Overview of Environmental Setting, a soil and groundwater remediation program is presently being implemented at the project site. To implement this remediation program existing development is currently in the process of being removed in accordance with separate permits that have been approved by the City of Long Beach. Portions of the Boeing Enclave may be demolished as part of the ongoing remediation program, however, the extent of the demolition necessary is currently not known. Accordingly, in order to provide a conservative environmental review, the demolition of the entire Boeing Enclave will be considered as a part of the project for purposes of air quality impacts.

The total amount of construction, the duration of construction and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, concentrations and the resulting impacts occurring at any one time. As such, the emission forecasts provided reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Based on the conservative assumption that the project could be completed under a slightly compressed schedule with buildout as early as 2017, the preliminary construction schedule was analyzed to determine if any phases of construction (e.g., demolition, site preparation, and construction) for each component of the project could occur. This potential for overlap of phases of construction and the emissions associated with each of these scenarios is presented in Table 9 on page 244.

As presented in Table 9, maximum construction-related daily emissions will exceed SCAQMD significance thresholds for CO, PM_{10}, NO_X, and ROC. Thus, emissions of these pollutants will result in significant short-term regional air quality impacts. Daily emissions of SO_X will be considered adverse, but less than significant, since the levels of these emissions will fall below the SCAQMD significance thresholds. In addition, average construction-related daily emissions were calculated and they are presented in Appendix D of this EIR. On average, maximum construction-related daily emissions will decrease by 13 percent for ROC, 35 percent for NO_X, 32 percent for CO, and 0.3 percent for PM_{10}. However, average daily construction-related emissions for these pollutants will still exceed SCAQMD significance thresholds.

Table 9

PROJECT-RELATED MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS

Maximum Daily Emissions	Estimated Emissions				
	CO	NO_X	PM_{10}	ROC	SO_X
Phase 1[a]	525	545	242	69	<1
Phase 2[b]	1,082	786	239	310	<1
Phase 3[c]	1,036	727	186	307	<1
Phase 4[d]	562	406	310	67	<1
Worst-Case Daily Emissions (lbs/day)	1,082	786	310	310	<1
SCAQMD Daily Threshold (lbs/day)	550	100	150	75	150
Lbs/Day Over (Under)	532	686	160	235	(149)
Significant?	Yes	Yes	Yes	Yes	No

[a] *Maximum daily emissions during Phase 1 includes Phase 1 Site Preparation.*
[b] *Maximum daily emissions during Phase 2 includes Phase 1 Building Construction and Phase 2 Site Preparation.*
[c] *Maximum daily emissions during Phase 3 includes Phase 2 Building Construction and Phase 3 Site Preparation.*
[d] *Maximum daily emissions during Phase 4 includes Phase 4 Site Preparation.*

Source: PCR Services Corporation, 2004.

(b) Local Construction Impacts

An analysis of localized construction impacts was conducted based on the SCAQMD's recommended Localized Significance Thresholds (LSTs) for PM_{10}, NO_2, and CO. A detailed discussion of the methodology used for this analysis is provided in Appendix D.

(1) PM_{10} Localized Impacts

As shown in Table 9 above, the main source of PM_{10} emissions occurs during the preparation/infrastructure stage where large numbers of diesel powered construction equipment are involved with soil disturbance and soil export (i.e., grading and related activities). During this stage of construction, not only are there combustion emissions from construction equipment, but it is during this stage that fugitive PM_{10} emissions are at their greatest. This condition (concurrent fugitive and equipment emissions) represents the period with the greatest potential for construction impacts with regard to PM_{10}.

A methodology for the assessment of localized PM_{10} from construction activities is not prescribed in the SCAQMD *CEQA Air Quality Handbook*. Accordingly, the impacts of PM_{10} emissions from construction emissions were analyzed using CARB and EPA dispersion models approved by the SCAQMD. The USEPA 1998 Guideline on Air Quality Models specifies the use of the USEPA Industrial Source Complex Short Term (ISCST) model for computing downwind pollutant concentrations from area/volume sources such as construction activity. The emissions established above were input into the ISCST model for analysis of the potential impacts of grading activity on sensitive receptors. The dispersion analysis addresses construction activity occurring during each phase of the project. Once the construction scenarios were established, the impacts on ambient PM_{10} concentrations were evaluated at receptors located in the surrounding community. The ISCST model was run using the SCAQMD mandated 1981 meteorological data from the Long Beach Monitoring Station and provided on the SCAQMD web site (www.aqmd.gov).

Results of the PM_{10} dispersion modeling indicate that development of the project could cause an exceedance of the 10.4 $\mu g/m^3$ PM_{10} incremental threshold. As shown in Table 10 on page 246, construction-related PM_{10} concentrations at the receptor with the highest potential for air quality impacts (i.e., residential uses north of the project site along Carson Street) will be approximately 39 and 37 $\mu g/m^3$ PM_{10} for Phase 1 and Phase 2 site preparation, respectively. No offsite sensitive land uses will be significantly impacted during Phase 3 and Phase 4 activities. Dispersion modeling isopleths which show the geographic distribution of these impacts are provided in Appendix D. Generally, without mitigation measures, Phase 1 impacts will extend some 800 meters to the north northeast of Phase 1 development. Phase 2 impacts will extend some 700 meters north of Phase 2 development.

Potential localized PM_{10} impacts will be limited to site preparation activities during Phase 1 and Phase 2. These ISC modeled potential impacts are based on a set of conservative assumptions that incorporate worst-case 1981 SCAQMD mandated meteorological conditions and maximum daily PM_{10} emissions occurring every day throughout the entire modeled year. Therefore, if site preparation activities during Phase 1 occurred for the entire year, although they are expected to occur only for 86 days, at the maximum rate of activity, the model predicts that one day out of 365 days an off-site PM_{10} concentration could be as high as 37 $\mu g/m^3$.

Similarly, if site preparation activities during Phase 2 occurred for the entire year, although they are expected to occur only for 84 days, at the maximum rate of activity, the model predicts that one day out of 365 days an off-site PM_{10} concentration could be as high as 39 $\mu g/m^3$.

Table 10

LOCAL AIR QUALITY CONSTRUCTION IMPACTS

Pollutant	Maximum Increase in Ambient Concentrations for Off-Site Sensitive Receptors During Project Development[a]			
	Phase 1	Phase 2	Phase 3	Phase 4
PM_{10} (24-hour)				
Maximum Concentration Increase ($\mu g/m^3$)	36.8	39.3	7.0	5.0
Threshold ($\mu g/m^3$)	10.4	10.4	10.4	10.4
Over/(Under)	26.4	28.9	(3.4)	(5.4)
Adverse Concentration	Yes	Yes	No	No
NO_2 (1-hour)				
Maximum Concentration Increase ($\mu g/m^3$)	110	32	32	28
Threshold ($\mu g/m^3$)	207	207	207	207
Over/(Under)	(97)	(175)	(175)	(179)
Adverse Concentration	No	No	No	No
CO (1-Hour)				
Maximum Concentration Increase ($\mu g/m^3$)	565	218	218	196
Threshold ($\mu g/m^3$)	11,500	11,500	11,500	11,500
Over/(Under)	(10,935)	(11,282)	(11,282)	(11,304)
Adverse Concentration	No	No	No	No
CO (8-Hour)				
Maximum Concentration Increase ($\mu g/m^3$)	211	74	74	39
Threshold ($\mu g/m^3$)	3,674	3,674	3,674	3,674
Over/(Under)	(3,463)	(3,600)	(3,600)	(3,635)
Adverse Concentration	No	No	No	No

[a] *Maximum impacted off-site receptor occurs at single-family residential uses north of the project site along Carson Street.*

Source: PCR Services Corporation, 2004.

(2) NO_2 and CO Localized Impacts

Based on the SCAQMD's guidance, an evaluation of localized NO_2 and CO air quality concentrations was conducted. The analysis evaluated whether project-related construction emissions will cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard based on the future conditions with the project (i.e., adding the project's incremental concentration to the maximum ambient concentrations of that pollutant over the last three years of monitoring data at the relevant monitoring station). As shown in Table 10 above, construction-related emissions of NO_2 and CO will not exceed the relevant ambient air quality standard and as a result, a less-than-significant impact will occur.

(3) Toxic Air Contaminants

The greatest potential for toxic air contaminant (TAC) emissions will be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to the SCAQMD's methodology, health effects from carcinogenic air toxics are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. An assessment of diesel particulate emissions was conducted to assess this potential risk using the same assumptions used for the localized analysis discussed above and incorporation of the diesel particulate trap project feature. As such, this analysis includes all diesel exhaust emissions associated with on-site heavy equipment and haul trucks during the construction period. The results of this analysis yield a maximum offsite individual cancer risk of 3.2 in a million, where the maximum impact occurs north of the project site along Carson Street. Based on the size of the project, a number of delivery trucks and haul trucks will require access to the site on a daily basis. Therefore, a project feature has been included to avoid sensitive land uses (e.g., schools and residences) by accessing the project site from the I-405 along Lakewood Boulevard and Cherry Avenue. As the project will not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, project-related toxic emission impacts will not be significant.

Furthermore, as discussed in Section V.E, Hazards and Hazardous Materials, should contaminated soils be found through the implementation of the ACER program during project construction activities, such soils shall be treated in accordance with the requirements of the appropriate regulatory agency. In addition, the Applicant will abide by SCAQMD Rule 1166 Volatile Organic Compound Emissions from Decontamination of Soil. This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, and handling, of VOC-contaminated soil. The mitigation measures set forth in Section V.E along with SCAQMD Rule 1166 ensures that the potential for accidental releases of air toxic emissions or acutely hazardous materials will be less than significant from a safety as well as air quality perspective and thus, will not pose a threat to public health and safety.

(4) Odors

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Via mandatory compliance

with SCAQMD Rules, no construction activities or materials will create objectionable odors. Therefore, no impact will occur and no mitigation measures will be required.

(2) Operations

Project operational impacts were evaluated for project buildout by 2020. In order to properly analyze operational emissions, it is important to assign appropriate emissions and emission factors to the individual emissions sources. Mobile source emission forecasts are sensitive to the forecast year, as future mobile source emission factors are substantially reduced as cleaner on-road vehicles are introduced into the county-wide vehicle fleet, while older more polluting vehicles retire. Refer to Appendix D for calculation and model worksheets.

(a) Regional Operation Impacts

Air pollutant emissions associated with project occupancy and operation will be generated by the consumption of electricity and natural gas and by miscellaneous sources (among other things, landscape-maintenance equipment, forklifts, consumer and commercial solvent usage, architectural and automotive coatings, restaurant charbroilers, and emergency generators).

Pollutant emissions associated with energy demand (i.e., electricity generation and natural gas consumption) are classified by the SCAQMD as regional stationary source emissions. Electricity is considered an area source since it is produced at various locations within, as well as outside of, the Basin. Since it is not possible to isolate where electricity is produced, these emissions are conservatively considered to occur within the Basin and are regional in nature. Criteria pollutant emissions associated with the production and consumption of energy were calculated using emission factors from the SCAQMD's *CEQA Air Quality Handbook*.

On-site stationary sources will include boilers, charbroilers, and emergency generators. These stationary sources (i.e., boilers) may require permits from the SCAQMD pursuant to Rules 201, 202 and 203. Emission increases related to those sources may be subject to SCAQMD Regulation XIII (New Source Review [NSR]) or Regulation XXX which, among other things, requires that Best Available Control Technology (BACT) be utilized to reduce pollutants and that any increases of criteria air pollutants be offset by achieving equivalent emission reductions at a facility within the Basin.

The project will also include the installation and operation of diesel-fired generators for emergency power generation. Unless a blackout occurs, these generators will be operated for a maximum of one hour per month for routine testing and maintenance purposes. The Applicant will be required to obtain a permit to construct and a permit to operate these standby generators under SCAQMD Rules 201, 202 and 203. Under NSR, the generator will be required to meet BACT requirements to minimize emissions of CO, VOC, NO_X, and PM_{10}. BACT standards for diesel-fired emergency generators specify a maximum allowable emissions rate of 8.5 grams of carbon monoxide per horsepower-hour (hp-hr), 1.0 gram of VOC per hp-hr, 6.9 grams of NO_X per hp-hr, and 0.38 gram of PM_{10} per hp-hr. Sulfur dioxide emissions will be minor since the sulfur content of the diesel fuel will be limited to 0.05 percent by weight under SCAQMD Rule 431.2 (Sulfur Content of Liquid Fuels). Emergency equipment, however, is exempt from modeling and offset requirements (Rule 1304) and does not require a health risk assessment (Rule 1401).

In addition to BACT, NSR typically requires offsets if a new source will emit greater than specified quantities of pollutants after implementation of BACT; however, offsets are not required under SCAQMD Rule 1304 (Exemptions) for equipment used exclusively as emergency standby equipment for nonutility electrical power generation provided that the equipment does not operate more than 200 hours per year.

Emissions for restaurant charbroilers were estimated using data from research conducted for the SCAQMD. Based on this research, the emission factors are 32.67 lbs. PM/1,000 lbs. of meat cooked and 3.94 lbs. VOC/1,000 lbs. of meat cooked. For conservative emissions estimates, it was assumed that VOC is equivalent to ROC and PM is equivalent to PM_{10}. It was also assumed that approximately 2,000 pounds of meat were cooked per day. The emission factors were multiplied by the amount of meat cooked per day to obtain emissions in lb/day for ROC and PM_{10}.

Emissions for miscellaneous sources were estimated to account for minor sources of criteria pollutants. Miscellaneous sources include, but are not limited to, consumer/ commercial solvents, landscaping equipment, and delivery unloading equipment. These sources may not individually emit large quantities of criteria pollutants but when combined emit quantitative amounts of criteria pollutants. Miscellaneous sources were conservatively calculated as 20 percent of the total project operations emissions.

The project could also include an optional component allowing for the continuation of a limited amount of aviation-related uses on the PacifiCenter site. The aviation-related uses could be located along the southern property boundary immediately adjacent to the

Airport. The uses will primarily serve as an amenity to businesses at the project site and will include hanger space for corporate jets and line maintenance "A" checks.[76] The aviation-related uses (e.g., ground support equipment, auxiliary power units, etc.) for the project will generate 9.3 lbs/day of CO, 0.6 lb/day of ROC, 2.6 lb/day of NO_X, 0.4 lb/day of PM_{10}, and 0.8 lb/day of SO_X. These emissions have been incorporated into the regional operational emissions for the project.

As shown in Table 11 on page 251, regional emissions resulting from the project will exceed the SCAQMD thresholds for NO_X, CO, PM_{10}, and ROC, and impacts associated with these pollutants will be significant. Emissions of SO_X will not exceed the SCAQMD threshold under this scenario and will be less than significant.

(b) Concurrent Construction and Operational Activity Impacts

The potential exists that the later stages of project construction could occur concurrently with the occupancy of the earlier stages of development. Therefore, emissions associated with concurrent construction and operation activities were evaluated. It was determined that concurrent emissions will be their greatest in the latter stages of project construction, wherein the project will nearly be built-out, but some construction activities will still be occurring.[77] As summarized in Table 12 on page 252, these combined emissions will exceed SCAQMD daily thresholds for CO, NO_X, PM_{10}, and ROC, but will not exceed the SCAQMD daily threshold for SO_X. Thus, a significant regional air quality impact will occur.

(c) Local Operation Impacts

Project traffic, during the operational phase of the project, will have the potential to create local area impacts. An analysis at selected intersections was performed to determine the potential for the presence or the creation of CO hot spots attributable to the project. The analysis considered traffic associated with buildout of the project, as this represents the highest level of project-related traffic volumes. Local area CO concentrations were projected using the CALINE-4 traffic pollutant dispersion model.

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[76] *Line Maintenance "A" checks are scheduled functional inspections performed from a checklist. The activities include lubrication of moving parts, servicing of fluids, inspection of components, hoses, electrical items and aircraft structure. Lighting and a ground power unit are used during these checks.*

[77] *The maximum concurrent construction and operational activity will occur during the latter stages of the Project development assuming the occupancy of approximately 2,500 residential dwelling units, 2,160,000 square feet of office space, 150,000 square feet of retail, and a 400 room hotel and the construction (i.e., building erection) of the Project's last 990,000 square feet of office space.*

Table 11

PROJECT-RELATED OPERATIONAL EMISSIONS
(Pounds per Day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Future No Project Conditions					
Mobile Sources a	48	5	15	6	<1
Stationary Sources [b]	3	17	<1	<1	1
Area Sources [c]	38	30	2	4	0.0
Aviation-related Sources	0.0	0.0	0.0	0.0	0.0
Miscellaneous Sources [d]	18	11	3	2	<1
Total	107	63	20	12	1
Future With Project Conditions					
Mobile Sources [a]	2,025	227	611	202	3
Stationary Sources [b]	46	255	7	5	20
Area Sources [c]	94	76	26	14	<1
Aviation-related Sources [d]	9	3	<1	<1	<1
Miscellaneous Sources [e]	436	112	130	44	5
Total	2,610	673	774	265	28
Difference (Net) Emissions	2,503	610	754	253	27
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	1,953	555	604	198	(123)

[a] *Mobile source emissions were calculated using the ADT provided in the Traffic Study completed by Crain and Associates. The ADT used to calculate mobile emissions included reductions for internal trips, existing driveway volumes, and transportation/mitigation measures.*

[b] *Stationary sources include electricity and natural gas usage.*

[c] *Area sources include emissions from emergency generators and charbroilers.*

[d] *Potential aviation-related uses will employ several tugs, several service carts and auxiliary power units. These pieces of equipment will only be operated intermittently in support of aircraft operations.*

[e] *Miscellaneous sources include among other things, consumer/commercial solvent usage (e.g., detergents, cleaning compounds, glues, polishes, and floor finishes), delivery and landscaping equipment.*

Source: PCR Services Corporation, 2004.

The analysis of CO impacts followed the protocol recommended by the California Department of Transportation and published in the document entitled, *Transportation Project-Level Carbon Monoxide Protocol*, December 1997. It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development will result in a CO concentration that exceeds federal or state CO standards. As stated in the Protocol, receptor locations for the 1-hour analysis were located 3 meters from each intersection corner and receptor locations for the 8-hour analysis were located 7 meters from each intersection corner.

Table 12

CONCURRENT OPERATION AND CONSTRUCTION EMISSIONS

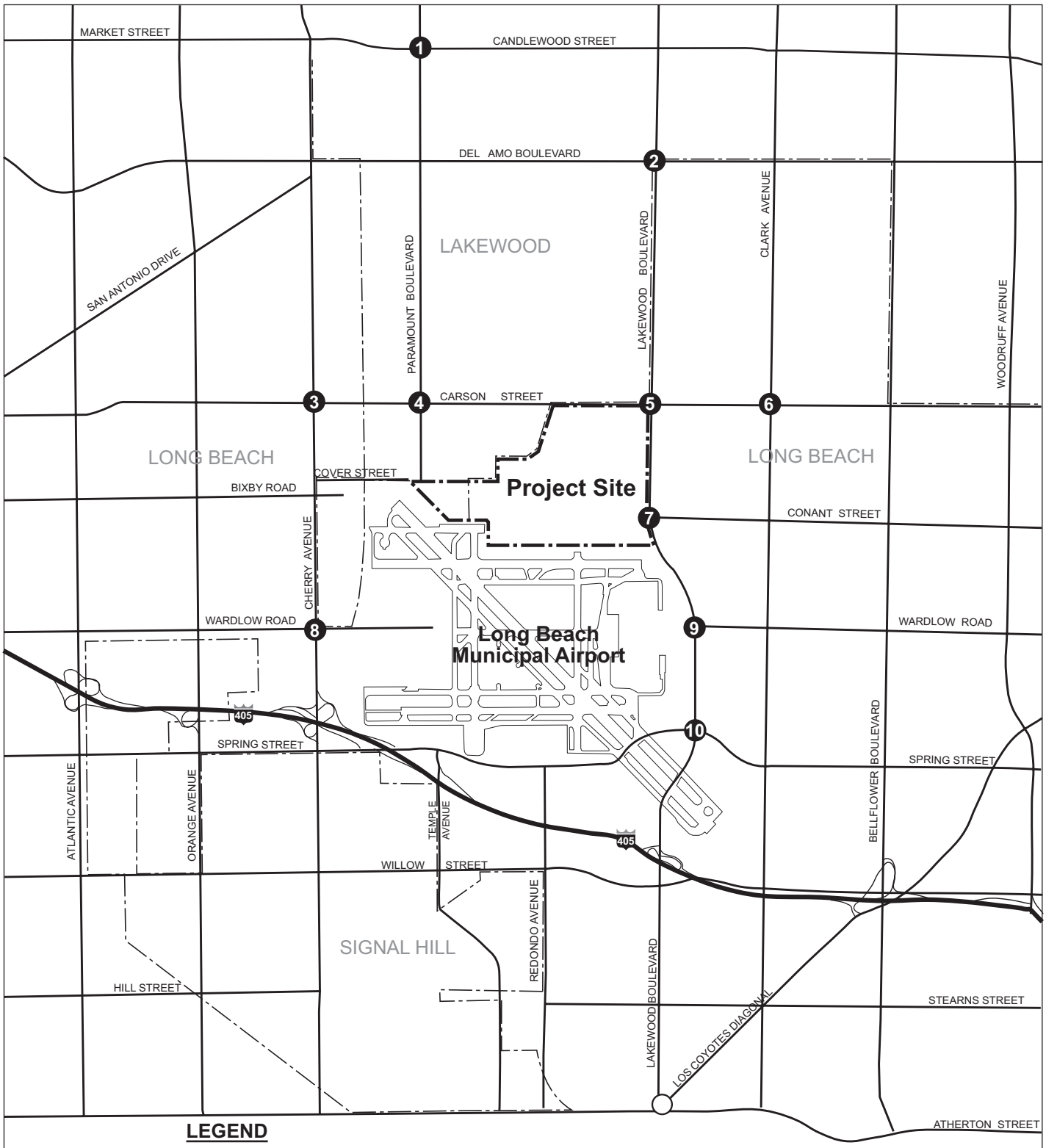
Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Net Operation Emissions [a]	2,891	651	612	286	23
Construction Emissions [b]	437	297	3	121	0.0
Total	**3,328**	**948**	**615**	**165**	**23**
SCAQMD Construction Significance Threshold	550	100	150	75	150
Over (Under)	2,778	848	465	90	127
Significant?	Yes	Yes	Yes	Yes	No
SCAQMD Operation Significance Threshold	550	55	150	55	150
Over (Under)	2,778	893	465	110	127
Significant?	Yes	Yes	Yes	Yes	No

[a] *The estimated emissions represent Year 2017 operational activities.*
[b] *The estimated emissions represent the maximum emissions from building construction (i.e., building erection) on a given day during Phase IV construction.*

Source: PCR Services Corporation, 2004.

The following intersections, as shown in Figure 32 on page 253, were selected based on their Level of Service (LOS), the Project's traffic contribution to the intersection, the proximity of project traffic to sensitive receptors, and intersection traffic volumes.

1. Candlewood Street and Paramount Boulevard
2. Del Amo Boulevard and Lakewood Boulevard
3. Carson Street and Cherry Boulevard
4. Carson Street and Paramount Boulevard
5. Carson Street and Lakewood Boulevard
6. Carson Street and Clark Avenue
7. Conant Street and Lakewood Boulevard
8. Wardlow Road and Cherry Avenue
9. Wardlow Road and Lakewood Boulevard



LEGEND

(#) Intersection Locations

1. Candlewood Street and Paramount Boulevard
2. Del Amo Boulevard and Lakewood Boulevard
3. Carson Street and Cherry Boulevard
4. Carson Street and Paramount Boulevard
5. Carson Street and Lakewood Boulevard
6. Carson Street and Clark Avenue
7. Conant Street and Lakewood Boulevard
8. Wardlow Road and Cherry Avenue
9. Wardlow Road and Lakewood Boulevard
10. Spring Street and Lakewood Boulevard

PCR

N

0 0.5 Miles

Figure 32
Intersections Analyzed for Local CO Impacts

Source: U.S.G.S. Quadrangle; PCR Services Corporation, 2004

10. Spring Street and Lakewood Boulevard

The CALINE-4 model generates the results of CO concentrations averaged over a one-hour time period under conservative atmospheric conditions for the area which include low wind speeds and low atmospheric circulation. Eight-hour concentrations were calculated by converting one-hour concentrations to eight-hour equivalents, using the conversion protocol recommended by the SCAQMD. Future CO concentrations are determined by adding the predicted increase in CO concentrations to a future forecasted ambient concentration. 2020 CO ambient concentrations were obtained from the SCAQMD *Air Quality Analysis Guidance Handbook*.[78]

The first step in the evaluation of local area CO impacts was to evaluate baseline traffic conditions in 2020 without implementation of the project. Baseline conditions were identified for the weekday A.M. and P.M. peak hour. The contribution of the project traffic to CO concentrations at the study intersections was calculated and added to the 2020 ambient concentrations to determine whether 2020 CO concentrations will exceed State and Federal CO standards.

The project's CO for A.M. and P.M. peak 1- and 8-hour CO levels are presented in Table 13 on page 255. As shown, the maximum 1- and 8-hour predicted concentrations are not anticipated to result in any exceedances of the State 1-hour CO standards at any of the study intersections. Similarly, 8-hour concentrations at the analyzed intersections will remain below the state standards. Since significant impacts will not occur at the intersections with the highest traffic volumes that are located adjacent to sensitive receptors, no significant impacts are anticipated to occur at any other locations in the study area as the conditions yielding CO hotspots will not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors that are included in this analysis will not be significantly affected by CO emissions generated by the net increase in traffic, which will occur under the project. As the project does not cause localized air quality impacts related to mobile sources, emissions will therefore be less than significant for the project.

Potential localized CO, NO_X, PM_{10} impacts from project-related stationary source operational emissions are anticipated to be minimal, since the project does not include any large stationary combustion equipment (e.g., power plants, landfills, concrete batch plants). Potential stationary combustion equipment that may occur within the project site will include emergency generators and equipment used to off-load deliveries in support of

[78] *http://www.aqmd.gov/ceqa/hdbk.html. (CO Concentrations for Hotspot Analysis—Long Beach Monitoring Station.)*

Table 13

WEEKDAY TRAFFIC LOCAL AREA CARBON MONOXIDE DISPERSION ANALYSIS

Intersection	Peak Period[a]	Maximum 1-Hour 2008 Base Concentration[b] (ppm)	Maximum 1-Hour 2008 w/Project Concentration[c] (ppm)	Significant 1-Hour Impact[d]	Maximum 8-Hour 2008 Base Concentration[e] (ppm)	Maximum 8-Hour 2008 w/Project Concentration[f] (ppm)	Significant 8-Hour Impact[d]
Candlewood Street and Paramount Boulevard	A.M.	5.8	5.9	No	4.3	4.3	No
	P.M.	5.9	6.0	No	4.3	4.4	No
Del Amo Boulevard and Lakewood Boulevard	A.M.	6.2	6.4	No	4.5	4.6	No
	P.M.	6.4	6.6	No	4.6	4.7	No
Carson Street and Cherry Avenue	A.M.	6.1	6.2	No	4.5	4.5	No
	P.M.	6.3	6.3	No	4.6	4.6	No
Carson Street and Paramount Boulevard	A.M.	5.9	6.1	No	4.3	4.4	No
	P.M.	6.1	6.3	No	4.5	4.6	No
Carson Street and Lakewood Boulevard	A.M.	6.1	6.3	No	4.5	4.6	No
	P.M.	6.3	6.5	No	4.6	4.7	No
Carson Street and Clark Avenue	A.M.	6.0	6.1	No	4.4	4.5	No
	P.M.	6.3	6.4	No	4.5	4.5	No
Conant Street and Lakewood Boulevard	A.M.	5.8	6.3	No	4.3	4.5	No
	P.M.	5.9	6.4	No	4.3	4.7	No
Wardlow Road and Cherry Avenue	A.M.	6.3	6.4	No	4.5	4.5	No
	P.M.	6.3	6.4	No	4.5	4.5	No
Wardlow Road and Lakewood Boulevard	A.M.	5.9	6.1	No	4.3	4.4	No
	P.M.	5.9	6.2	No	4.4	4.5	No
Spring Street and Lakewood Boulevard	A.M.	6.6	6.7	No	4.7	4.7	No
	P.M.	6.2	6.7	No	4.6	4.8	No

ppm = parts per million.

[a] *Peak hour traffic volumes are based on the Traffic Analysis prepared for the project by Crain & Associates, January 2004.*

[b] *SCAQMD 2020 1-hour ambient background concentration (5.1 ppm) + 2020 Base traffic CO 1-hour contribution.*

[c] *SCAQMD 2020 1-hour ambient background concentration (5.1 ppm) + 2020 w/project traffic CO 1-hour contribution.*

[d] *The most restrictive standard for 1-hour CO concentrations is 20 ppm and for 8-hour concentrations is 9.0 ppm.*

[e] *SCAQMD 2020 8-hour ambient background concentration (3.9 ppm) + 2020 Base traffic CO 8-hour contribution.*

[f] *SCAQMD 2020 8-hour ambient background concentration (3.9 ppm) + 2020 w/project traffic CO 8-hour contribution.*

Source: PCR Services Corporation, 2004.

the project's office, commercial, and retail land uses (e.g., forklift). All on-site stationary sources that have the potential to generate substantial air quality emissions will be subject to SCAQMD Regulation XIII (New Source Review) and as such, will be equipped with best available control technology (BACT). While no stationary sources of the type described above are anticipated to locate within the project site, any new stationary sources will be required to comply with SCAQMD Rule XIII and through air quality modeling demonstrate compliance with the localized significance thresholds. Therefore, project-related stationary source combustion equipment emissions will result in a less-than-significant impact.

(d) Air Toxic Impacts

As the project is completed over time, new residents and employees at the site may be located near new commercial activities that handle hazardous materials, near ongoing industrial activities within the Boeing Enclave and/or near demolition and remediation activities within the Boeing Enclave. A Risk Management Plan (RMP), described in Section V.E, Hazards and Hazardous Materials will be developed by the Applicant for those facilities meeting the applicability threshold to assure that such activities are fully protective of the health and safety of new residents and employees at PacifiCenter.

According to the SCAQMD *CEQA Handbook*, land uses associated with toxic emissions include industrial, manufacturing, and commercial land uses such as gas stations and dry cleaning processing facilities (e.g., use of Perchloroethylene on-site). Such potential toxic emitting land uses are not proposed for development on the project site. However, the continued use of a portion of the project site for aviation-related uses, more specifically the Boeing Enclave operations, will continue to generate hazardous waste streams such as paint sludge and filters, sealant tubes, primer cups and contaminated debris, toner and dry ink, batteries, oil and oil/water mixtures, and jet fuel. These hazardous materials associated with maintenance activities will be used and stored on-site and may have the potential to generate toxic emissions. As a routine part of the ongoing industrial operations in the Boeing Enclave areas, such hazardous materials are subject to a panoply of federal, state and local requirements to assure that all hazardous materials management activities are safe and protective of human health and safety, and the environment.

As part of the project, future commercial businesses that locate on the project site may use hazardous materials that are typically used by such businesses, and will be subject to ongoing federal, state, and local regulations to assure the safe management and disposal of such materials. These types of sources will not be considered a substantial source of potential air toxic emissions.

The project could include accessory warehouse uses up to the permitted amount allowed in the PCC-1 and PCC-2 areas. The SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions* identifies warehouse distribution centers and truck terminals as potential sources of diesel particulates. The SCAQMD will typically require a health risk assessment for these types of facilities. However, as the project will only include accessory warehouse uses and no warehouse/distribution centers, the potential for locating large numbers of heavy-duty trucks idling for extended periods of time is substantially reduced. Also, a quantitative analysis of potential toxic air contaminants is technically infeasible since potential sources can not be specifically identified on the Project site. In addition, any facility that warrants such an analysis will be required to comply with SCAQMD Rule XIV (New Source Review of Air Toxics). Nevertheless, the project incorporates SCAQMD recommended mitigation measures for reducing mobile source diesel emissions and any potentially significant impacts.[79]

While no stationary sources of the type that could emit significant amounts of air toxics are anticipated to be located within the project site, any new stationary sources will be required to comply with SCAQMD Rule XIV (New Source Review of Air Toxics) and through air dispersion modeling, if necessary, demonstrate that the source will not exceed the maximum individual cancer risk of ten in one million. Potential sources of air toxic emissions associated with project development include, but may not be limited to, diesel particulates from loading docks, delivery trucks, and buses as well as small amounts of toxics from consumer household products (e.g., detergents, cleaning compounds, glues, polishes, floor finishes, cosmetics, perfume, antiperspirants, rubbing alcohol, room fresheners, car wax, paint and lawn care products). These sources are typical within the urban environment and will contribute small amounts of toxic air pollutants to the project vicinity, and will be well below any levels that will result in a significant impact on human health. As such, a less-than-significant impact on human health will occur.

An assessment of potential accidental releases of air toxic emissions or acutely hazardous materials posing a threat to public health and safety was also conducted. As described above, the sources of potential hazardous materials will be well below levels that could result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety and therefore the project will result in no impact.

[79] *SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions, December 2002.*

When considering potential air quality impacts under CEQA, particularly in reference to sensitive receptors, special consideration must be given to the location of sensitive receptors within close proximity of land uses that emit toxic air contaminants (TACs). SCAQMD recommends a health risk assessment (HRA) if it is determined that new sensitive receptors are proposed within one-quarter mile of an existing source of toxic emissions. Therefore, TAC emissions from sources within one-quarter mile of the proposed residential site location were identified, quantified to the extent that such data was reasonably available, and evaluated in a risk assessment. The complete HRA is included in Appendix E of this EIR.

SCAQMD provided a list of potential sources within one-quarter mile of the proposed sensitive receptors (i.e., residential uses) at the project site that have the potential to generate hazardous and acutely hazardous air emissions. A public records request was filed with SCAQMD for all pertinent information regarding each facility's potential to emit hazardous air pollutants. Specifically, requested information for each facility included all operation permits, emissions summaries, and toxic health risk assessments. Based on information provided by SCAQMD, this list was further refined to three potential sources within one-quarter mile of the proposed residential uses and are provided in Table 14 on page 259. Potential SCAQMD sources were excluded from further analysis based on several factors: (1) the recent closure of some sources listed by the SCAQMD; and (2) sources with sufficiently small emission inventories that will not influence the potential health risk (e.g., small quantity generators of hazardous waste). In addition to the identified stationary sources, the Airport is also located within one-quarter mile of the proposed residential site and is included in the HRA.[80] The level to which the Airport was analyzed in the HRA was dictated by the information available from the California Air Resources Board (ARB), SCAQMD, Airport, and the City of Long Beach, and as such, conservative default assumptions were used where data was not readily available.

For carcinogenic exposures, the summation of risk totaled 8.3×10^{-6} (8.3 in a million) for the maximum exposed individual (MEI) within the proposed residential land use. In comparison to the established threshold of ten in one million (1.0×10^{-5}), carcinogenic risks fall within acceptable limits. Four TACs were found to account for 94 percent of the incremental cancer risk and include diesel particulate, hexavalent chromium, 1,3-butadiene, and benzene. The primary source of diesel particulate is associated with ground support equipment at the Airport and accounts for 58 percent of the incremental

[80] *Airport related sources included aircraft activity (landing-takeoff operations), ground support equipment, auxiliary power units, ARB and SCAQMD identified facilities, fuel farms, and vehicular activity (access roadway and parking facilities).*

Table 14

SCAQMD LISTED FACILITES WITHIN ONE-QUARTER MILE OF PROPOSED RESIDENTIAL USES AT THE PROJECT SITE THAT HAVE THE POTENTIAL TO GENERATE HAZARDOUS AND ACUTELY HAZARDOUS AIR EMISSIONS

Facility ID	Name	Address
123731	Super Cleaners	4501 East Carson Street, Suite 102
800038	Douglas Products Division (717 Production, C-17 Production, and Enclave)	3855 Lakewood Boulevard and 2250 Wardlow Road
124074	TESORO West Coast-Mirastar	2770 Carson Street

Source: SCAQMD, Public Records Request, October 24, 2003.

cancer risk and to a lesser extent the Douglas Products Division (717 production, C-17 production and the Boeing Enclave), which accounts for 7 percent of the incremental cancer risk. Sources of hexavalent chromium include aircraft exhaust and a spray booth at the Douglas Products Division, which each account for 8 percent of the incremental cancer risk. The primary source of 1,3-butadiene is aircraft exhaust in taxi/idle mode and accounts for approximately 8 percent of the incremental cancer risk. Benzene emissions from aircraft exhaust accounts for approximately 5 percent of the incremental cancer risk.

As previously discussed, ground support equipment at the Airport will largely be converted to electric or zero emission vehicles by 2010, which will significantly reduce diesel particulate emissions from ground support equipment at the Airport.[81] Therefore, the cancer risk of eight in one million ($8.3x10^{-6}$) would likely be reduced to three in one million ($3.4x10^{-6}$) given that diesel particulate emissions from the Airport represent approximately 58 percent of the incremental cancer risk.

For noncarcinogenic chronic exposures hazard indices were calculated for all relevant toxicological endpoints. The maximum summation of risks for a target organ was 0.02 for the MEI within the proposed residential land use. In comparison to the established threshold of 1.0, chronic risks are below the threshold. The main contributor to incremental noncarcinogenic chronic exposure is acrolein, which is found in aircraft exhaust, and accounts for approximately 91 percent of the chronic risk.

For noncarcinogenic acute exposures, hazard indices were calculated for all relevant toxicological endpoints. The maximum summation of risks for a target organ was 0.03 for the MEI within the proposed residential land use. In comparison to the

[81] *SCAQMD, Statement of Principles for the Voluntary South Coast Ground Service Equipment Memorandum of Understanding, November 27, 2002.*

established threshold of 1.0, acute risks are below the threshold. The main contributor to incremental noncarcinogenic acute exposure is acrolein, which is found in aircraft exhaust and from a spray booth operated by the Douglas Products Division, and accounts for approximately 99 percent of the chronic risk.

It should be noted that according to the SCAQMD's MATES-II study, the cancer risk in the project vicinity is approximately 1,000 to 1,200 in one million. Approximately 90 percent of such cancer risk is related to mobile combustion sources (e.g., cars, trucks, trains, ships, aircraft, etc.) associated with the Port of Long Beach, I-405, I-710, I-605, SR-91, Alameda Corridor, and the Long Beach Airport. In addition, the project vicinity cancer risk of 1,000 to 1,200 in one million is approximately 14 to 29 percent lower than the average cancer risk in the Basin of 1,400 per million. Therefore, the health effects from local air quality on new sensitive land uses (i.e., eight in one million) will not likely be substantially different in the Lakewood & Long Beach area. In addition, the incremental health risk impacts from air toxic sources within one-quarter mile of the project site are also substantially below the applicable carcinogenic, chronic, and acute risk exposure significance thresholds and as such impacts on human health from project development will be less than significant.

(e) Odor Impacts

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors. Therefore, the project will not create adverse odors as discussed above and will have no impact related to objectionable odors.

e. Consistency with Adopted Plans and Policies

This section of the analysis examines the consistency of the project with SCAG's RCPG, the SCAQMD's AQMP, and the Cities of Long Beach and Lakewood General Plan Air Quality policies.

(1) SCAQMD Handbook Policy Analysis

In accordance with the procedures established in the SCAQMD *CEQA Air Quality Handbook*, the following criteria are required to be addressed in order to determine the Project's consistency with SCAQMD and SCAG policies:

1. Will the Project result in any of the following:

   - An increase in the frequency or severity of existing air quality violations; or
   - Cause or substantially contribute to new air quality violations; or
   - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2. Will the Project exceed the growth assumptions utilized in preparing the AQMP?

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for projects such as PacifiCenter include forecasts of project-related emissions in a regional context during construction and project occupancy. These forecasts are provided earlier in this section (regional construction impacts and regional operation impacts). Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of the project's pollutant emissions on localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in the preceding sections, localized concentrations for PM_{10}, CO, and NO_2 have been projected for the project.

During the project construction period, PM_{10} is the primary pollutant of concern with respect to localized concentrations and ambient air quality. As such, the Project's construction-period PM_{10} emissions were analyzed using the ISC dispersion model to: (1) ascertain potential effects on localized concentrations; and (2) determine if there is a potential for such emissions to cause or affect a violation of the ambient air quality standard for PM_{10}. Results of the PM_{10} dispersion modeling indicate that there is a potential for project-related emissions to cause the ambient PM_{10} concentration to increase by the SCAQMD-recommended significance threshold of 10.4 $\mu g/m^3$, or more, at locations within close proximity of the project site at various times during construction. However, this impact will only occur during construction Phases 1 and 2, and will not have a long-term impact on the regions ability to meet State and Federal air quality standards. In addition, the project will comply with SCAQMD Rule 403 and will implement all feasible mitigation measures for control of PM_{10}. Nonetheless, the project will have a significant temporary impact on PM_{10} emissions.

Project-related CO and NO_2 emissions during construction were also evaluated using the ISC dispersion model to determine if there is a potential for such emissions to cause or affect a violation of respective ambient air quality standards. As demonstrated earlier, results of the CO and NO_2 dispersion modeling indicate that it is unlikely that

emissions during construction will form a new or exacerbate an existing CO or NO_2 "hot spot."

During long-term project operations, CO is the preferred pollutant for assessing local area air quality impacts from motor vehicle operations. Based on methodologies set forth by the SCAQMD, one measure of local area air quality impacts which can indicate whether the project will cause or affect a violation of an air quality standard will be based on the estimated CO concentrations at selected receptor locations located in close proximity to the project site. As indicated earlier, CO emissions were analyzed using the CALINE-4 model. No violations of the state and federal carbon monoxide standards are projected to occur.

The SCAQMD's second criterion for determining project consistency focuses on whether or not the project will exceed the growth assumptions utilized in preparing the AQMP. Determining whether or not a project exceeds growth assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with the population, housing and employment growth projections; (2) project mitigation measures; and (3) appropriate incorporation of AQMP land use planning strategies. The following discussion provides an analysis of each of these three criteria.

- Is the Project consistent with the population, housing and employment growth projections upon which AQMP forecasted emission levels are based?

A project is consistent with the AQMP if it is consistent with the population, housing and employment assumptions which were used in the development of the AQMP. The 2003 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates, in part, the SCAG 2001 Regional Transportation Plan (RTP) socioeconomic forecast projections of regional population, housing and employment growth. The PacifiCenter project site is located within the Gateway Cities sub-region of the SCAG planning area. In the 2001 RTP, SCAG forecasts the following growth assumptions for the Gateway Cities sub-region between the years 2004 and 2020: 172,510 persons; 39,273 households; and 112,586 employment opportunities.

As discussed in the Population, Housing, and Employment sections of this EIR, the proposed project will add 4,784 new residents due to development of 2,500 dwelling units, and add a maximum of 14,195 net new jobs by the year 2020. When compared to the SCAG projections for the Gateway Cities sub-region, the project-related growth will represent 2.8 percent, 6.4 percent, and 12.6 percent of the total growth forecast for population, housing units (households), and employment growth, respectively, between

the years 2004 and 2020. Given the fact that the Gateway Cities sub-region is already largely built-out, such levels of growth are not sufficiently large to call the SCAG growth forecasts into question. As the SCAQMD has incorporated these same projections into the AQMP, it is concluded that the project will be consistent with the AQMP growth projections.

- Does the project implement all feasible air quality mitigation measures?

As discussed below in sub-section 4 (Mitigation Measures) to this Air Quality section, implementation of all feasible mitigation measures is recommended to reduce air quality impacts to the extent feasible. The proposed project will incorporate a wide array of key air pollution control measures identified by the SCAQMD.

- To what extent is project development consistent with the land use policies set forth in the AQMP?

The project will serve to implement a number of City of Long Beach, City of Lakewood, and SCAG land use policies, as discussed in the Land Use and Planning section of this EIR. Based on the analyses presented therein, the project will promote reductions in vehicle trips and the consequent generation of pollutant emissions in the following ways: (a) by providing a mix of uses including commercial office, research and development, retail, hotel and residential uses; (b) by providing employment opportunities near residences and public transit; (c) by encouraging pedestrian and bicycle circulation through the site by establishing a system of walkways and jogging and biking paths, including a bike path that links to a more regional bicycle system through Long Beach; (d) by providing development in proximity to regional corridors and within an area that is well-served by public transportation, including MTA buses and more distantly the Metro Rail Blue Line system; and (e) by providing on-site recreation and open space amenities. In addition, the project includes energy conservation features in new construction that will reduce stationary source emissions, transportation demand management features to reduce vehicle trips and associated emissions, as well as transportation system improvements that are intended to reduce bottlenecks and associated emissions. Furthermore, the project will be required to comply with air quality regulations set forth by the AQMD and will include mitigation measures to reduce air quality emissions. These attributes of the project are also consistent with various policies set forth in the Air Quality Elements of the City of Long Beach and the City of Lakewood General Plans.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of the project on air quality in the Basin. Although the project may

cause an exceedance of the localized PM_{10} significance criteria, this exceedance will be short-term in nature. This impact will only occur during construction Phases 1 and 2, and will not have a long-term impact on the regions ability to meet State and Federal air quality standards. In addition, the project will comply with SCAQMD Rule 403 and will implement all feasible mitigation measures for control of PM_{10}. Also, the project will be consistent with the goals and policies of the AQMP for control of fugitive dust. Therefore, given that the project will be consistent with AQMP strategies to bring the Basin into PM_{10} attainment, the project will be consistent with local air quality plans and policies.

4. CUMULATIVE IMPACTS

The SCAQMD has set forth a methodological framework, discussed below, as well as significance thresholds for the analysis of a project's contribution to cumulative air quality impacts. The SCAQMD's methodology differs from the cumulative impacts methodology employed throughout the remainder of this EIR, in which foreseeable future development within a given service boundary or geographical area is predicted and associated impacts measured. Based on the SCAQMD methodology, cumulative air quality impacts for the project were evaluated in the context of Los Angeles County as a whole for the projected buildout year 2020. However, a site-specific assessment of the project in association with the on-site soil and groundwater remediation program (Related Project No. 44) is also warranted, as the combined activities of these projects have the potential to affect air quality on a local basis.

Aircraft manufacturing, testing, and repair of commercial and military aircraft that has occurred on the project site for nearly 60 years involves the use of a wide range of chemical products including organic solvents, metal processing solutions, petroleum products, and electronic transformer oils. These broad categories of chemicals are considered the primary compounds/constituents that have been detected in soil and groundwater beneath the site. Historical releases of some or all of these primary compounds/constituents have impacted soil and groundwater quality both on- and off-site.

In 1995, the California Regional Water Quality Control Board—Los Angeles Region (LARWQCB) issued Cleanup and Abatement Order (CAO) No. 95-048 to McDonnell Douglas, Boeing's predecessor. The CAO applies to the entire 343-acre C-1 facility.[82] The CAO was revised in December 2000. In response to the original and amended CAO, Boeing has implemented a comprehensive environmental assessment and remediation

[82] *The project site constitutes 261 acres of the C-1 Boeing site that are located west of Lakewood Boulevard.*

program in coordination with LARWQCB. As these remediation efforts are underway and will occur regardless of whether redevelopment of the site occurs, the remediation program is not considered part of the PacifiCenter project. Rather, the remediation program is a related project for CEQA purposes (Related Project No. 44). A summary of the ongoing remediation program is presented in Section V.E, Hazards and Hazardous Materials.

As part of the assessment and remediation program, a human health risk assessment (HHRA) procedure, reviewed and approved by the Office of Environmental Health Hazard Assessment (OEHHA) and LARWQCB, will be used to assess when areas have been remediated to levels that present no significant human health risks for future commercial, light industrial, and residential uses.

The Assessment Confirmation and Expedited Remediation (ACER) program is a component of the comprehensive environmental assessment and remediation program. The ACER program will implement additional monitoring and sampling of shallow soils during the removal of pavement and subsurface structures at the site. Through the implementation of the ACER program, areas of contamination may be identified. If areas of contamination are identified, the areas will be remediated in accordance with the specifications identified in the LARWQCB ACER work plan.

In addition, a Risk Management Plan (RMP) will be developed (as described in Section V.E, Hazards and Hazardous Materials) to assure that the remediation activities are fully protective of the health and safety of new residents and employees at the project site.

Furthermore, the Applicant will abide by SCAQMD Rule 1166 Volatile Organic Compound Emissions from Decontamination of Soil. This Rule sets requirements to control the emission of Volatile Organic Compounds (VOCs) from excavating, grading, and handling VOC–contaminated soil. The mitigation measures set forth in Section V.E, Hazards and Hazardous Materials, along with SCAQMD Rule 1166 ensure that the potential for accidental releases of air toxic emissions or acutely hazardous materials will be less than significant from a safety as well as air quality perspective and thus, will not pose a threat to public health and safety.

As mentioned above, the SCAQMD has established both a methodological framework and significance thresholds for the assessment of a project's contribution to cumulative air quality impacts. Currently, the SCAQMD's approach towards assessing cumulative impacts is based on the fact that the SCAQMD's AQMP forecasts attainment of ambient air quality standards in accordance with the requirements of the CCAA, taking

into account SCAG's forecasted future regional growth. Therefore, if all projects (in this case, in the County) are individually consistent with the growth assumptions upon which the SCAQMD's AQMP are based, then future development will not impede the attainment of ambient air quality standards. Based on the SCAQMD's significance threshold, a project will have a significant cumulative air quality impact if the ratio of daily project vehicle miles traveled to daily countywide vehicle miles traveled exceeds the ratio of daily project employees to daily countywide employees or if it exceeds the ratio of project population to countywide population.

An assessment of the project's cumulative impacts is presented in Table 15 on page 267. The project's growth rate in terms of the number of residents and the number of employees exceeds the project's growth rate in the number of vehicle trips when compared to the regional average assumptions upon which the SCAQMD's AQMP are based. Therefore, fewer mobile emissions will be produced by project residents and employees than those accounted for in emission forecasts in the AQMP. Nevertheless, implementation of the project will result in an increase in emissions which will contribute to region-wide emissions on a cumulative basis and as such, the project's contribution to cumulative air quality impact is concluded to be significant. In such cases, the SCAQMD recommends that all projects, to the extent possible, employ feasible mitigation measures, which has been done with regard to the proposed project.

5. MITIGATION MEASURES

The following air quality mitigation measures set forth a program of air pollution control strategies designed to reduce the project's air quality impacts. In addition, Section V.L, Transportation/Circulation and Parking, of this EIR, includes traffic mitigation measures, such as the Adaptive Traffic Control System (ATCS) that will serve to synchronize traffic signals and a Transportation Demand Management (TDM) program that will include preferred carpool/vanpool parking and matching, thereby reducing mobile source air emissions. In addition to the mitigation measures, the project features presented and evaluated above will further reduce the project's air quality impacts.

(1) Construction

Mitigation Measures provided below implement recommended mitigation measures provided in SCAQMD's *CEQA Air Quality Handbook*, Chapter 11, and are in addition to the requirements of SCAQMD Rule 403 (Fugitive Dust).

Table 15

PROJECT CUMULATIVE AIR QUALITY IMPACTS

Daily Vehicle Miles Traveled for Project Population [a]	92,899
Daily Vehicle Miles Traveled Countywide [b]	239,823,000
Daily Vehicle Miles Traveled Ratio	**0.00038**
Project Population	4,784
Countywide Population [c]	11,759,545
Population Ratio	**0.00041**
Significance Test—Daily Vehicle Miles Traveled Ratio Greater Than Population Ratio	**No**
Daily Vehicle Miles Traveled for Project Employment [a]	404,403
Daily Vehicle Miles Traveled Countywide [b]	239,823,000
Daily Vehicle Miles Traveled Ratio	**0.00169**
Project Employment	14,195
Countywide Employment [c]	5,155,842
Employment Ratio	**0.00275**
Significance Test—Daily Vehicle Miles Traveled Ratio Greater Than Employment Ratio	**No**

[a] *Increase of vehicle miles traveled as a result of the project, Transportation and Circulation, Section V.L. Data obtained from URBEMIS 2002.*
[b] *CARB, Emfac2002, V2.2.*
[c] *Data obtained from SCAG's Regional Transportation Plan, Socioeconomic projections, 2001.*

Source: PCR Services Corporation, 2004.

V.B-1 All land clearing/earth-moving activity areas shall be watered to control dust as necessary to remain visibly moist during active operations.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-2 All construction roads internal to the construction site that have a traffic volume of more than 50 daily trips by construction equipment, or 150 total daily trips for all vehicles, shall be surfaced with base material or decomposed granite.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-3 Streets shall be swept as needed during construction, but not more frequently than hourly, if visible soil material has been carried onto adjacent public paved roads.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-4 Construction equipment shall be visually inspected prior to leaving the site and loose dirt shall be washed off with wheel washers as necessary.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-5 Water three times daily or non-toxic soil stabilizers shall be applied, according to manufacturers' specifications, as needed to reduce off-site transport of fugitive dust from all unpaved staging areas and unpaved road surfaces.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-6 Traffic speeds on all unpaved roads shall not exceed 15 mph.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-7 All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-8 General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off when not in use, to reduce vehicle emissions. Construction activities should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-9 On-site construction equipment staging areas and construction worker parking lots shall be located on either paved surfaces or unpaved surfaces subject to soil stabilization.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-10 To the extent possible, petroleum powered construction activity shall utilize electricity from power poles rather than temporary diesel power generators and/or gasoline power generators.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-11 On-site mobile equipment shall be powered by alternative fuel sources (i.e., methanol, natural gas, propane or butane) as feasible.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-12 All construction equipment used in the project construction shall be stored within the project site (away from adjacent residential areas) to reduce the impact on the street system.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-13 Deliveries related to construction activities that affect traffic flow shall be scheduled during off-peak hours (e.g., 10:00 A.M. and 3:00 P.M.) and coordinated to achieve consolidated truck trips. When traffic flow is impacted by the movement of construction materials and/or equipment, temporary traffic controls shall be provided to improve traffic flow (e.g., flag person).

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-14 All on-site heavy-duty construction equipment shall be equipped with diesel particulate traps as feasible.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

V.B-15 In compliance with Long Beach Municipal Code and Lakewood Municipal Code requirements, construction activities shall be limited to the following operation schedule: weekdays and federal holidays, 7 A.M. to 7 P.M.; Saturday, 9 A.M. to 6 P.M.; no activities on Sundays within the City of Long Beach; and Sunday, 9 A.M. to 7 P.M. within the City of Lakewood.

Monitoring Phase: Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

(2) Operation

Emission control measures are specified for three sources of operational emissions: (1) service and support facilities; (2) natural gas consumption and electricity production; (3) building materials, architectural coatings, and cleaning solvents; and (4) warehouse/distribution centers.

(a) Service and Support Facilities (point sources)

V.B-16 All point source facilities shall obtain all required permits from the SCAQMD. The issuance of these permits by the SCAQMD will require the operators of these facilities to implement Best Available Control Technology and other required measures that reduce emissions of criteria air pollutants.

Monitoring Phase: Operation

Enforcement Agency: South Coast Air Quality Management District

Monitoring Agency: South Coast Air Quality Management District

Action Indicating Compliance: Operating permits

V.B-17 Land uses on the project site shall be limited to those that do not emit high levels of potentially toxic contaminants or odors.

Monitoring Phase: Pre-Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Issuance of building permits

(b) Natural Gas Consumption and Electricity Production

V.B-18 All residential and non-residential buildings shall meet the California Title 24 Energy Efficiency standards for water heating, space heating and cooling, to the extent feasible.

Monitoring Phase: Pre-Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Issuance of building permits

V.B-19 All fixtures used for lighting of exterior common areas shall be regulated by automatic devices to turn off lights when they are not needed.

Monitoring Phase: Pre-Construction

Enforcement Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Issuance of building permits

(c) Building Materials and Architectural Coatings

V.B-20 Building materials, architectural coatings and cleaning solvents shall comply with all applicable SCAQMD rules and regulations.

Monitoring Phase: Construction

Enforcement Agency: South Coast Air Quality Management District

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Field Inspection

(d) Warehouse Distribution Uses

The following mitigation measures shall be considered during operation of any accessory warehouse/distribution uses at the project site to ensure that health risk impacts are less than significant.

V.B-21 Re-route truck traffic by restricting truck traffic on certain sensitive routes;

V.B-22 Enforce truck parking restrictions;

V.B-23 Restrict truck idling;

V.B-24 Electrify service equipment at the warehouse;

V.B-25 Provide electrical hook-ups for trucks that need to cool their load;

V.B-26 Electrify auxiliary power units; and

V.B-27 Use low-sulfur diesel fuel with particulate traps, where feasible.

Monitoring Phase: Pre-Construction

Enforcement Agency: South Coast Air Quality Management District

Monitoring Agency: City of Long Beach Planning and Building Department and City of Lakewood Community Development Department

Action Indicating Compliance: Issuance of building permits

6. SIGNIFICANCE AFTER MITIGATION

As shown in Table 16 on page 276, activities related to construction of the project will still exceed the SCAQMD daily emission thresholds for regional NO_X, CO, PM_{10}, and ROC after implementation of all feasible mitigation measures and incorporation of project features as described above. Therefore, construction of the project will have a significant and unavoidable impact on regional air quality. Construction emissions will not exceed the SCAQMD significance threshold for SO_2, and, thus, impacts are concluded to be less than significant for SO_2.

During the operational phase, the project will result in a significant net increase in regional emissions of CO, ROC, NO_X, and PM_{10} from the operation of both stationary and mobile sources. Mitigation measures and project features identified above will reduce the potential air quality impacts of the project to the degree technically feasible, but emissions will remain above SCAQMD significance thresholds. Therefore, operation of the proposed project will have a significant and unavoidable impact on regional air quality. Operational emissions will not exceed the SCAQMD significance threshold for SO_2, and, thus, impacts are concluded to be less than significant for SO_2.

No significant impacts related to local air toxics, CO, and NO_2 concentrations from construction are forecast to occur for the project. However, local PM_{10} construction concentrations will result in a significant net increase in emissions. As shown in Table 16 on page 276, mitigation measures and project features identified above will reduce the potential air quality impacts of the project to the degree technically feasible, but emissions will remain above the SCAQMD significance threshold. As shown in Table 17 on page 277, Construction-related PM_{10} concentrations at the receptor with the highest potential for air quality impacts (i.e., residential uses north of the project site along Carson Street) will be approximately 18 and 20 $\mu g/m^3$ PM_{10} for Phase 1 and Phase 2 site preparation, respectively. No offsite sensitive land uses will be significantly impacted during Phase 3

Table 16

PROJECT-RELATED REGIONAL CONSTRUCTION EMISSIONS (MITIGATED)

Maximum Daily Emissions	Estimated Emissions				
	CO	NO_X	PM_{10}	ROC	SO_X
Phase 1[a]	525	545	124	69	<1
Phase 2[b]	1082	786	120	310	<1
Phase 3[c]	1036	727	94	307	<1
Phase 4[d]	562	406	157	67	<1
Worst-Case Daily Emissions (lbs/day)	1082	786	120	310	<1
SCAQMD Daily Threshold (lbs/day)	550	100	150	75	150
Lbs/Day Over (Under)	532	686	(30)	235	(149)
Significant?	Yes	Yes	Yes	Yes	No

[a] *Maximum daily emissions during Phase 1 includes Phase 1 Site Preparation.*
[b] *Maximum daily emissions during Phase 2 includes Phase 1 Building Construction and Phase 2 Site Preparation*
[c] *Maximum daily emissions during Phase 3 includes Phase 2 Building Construction and Phase 3 Site Preparation*
[d] *Maximum daily emissions during Phase 4 includes Phase 4 Site Preparation.*

Source: PCR Services Corporation, 2004.

and Phase 4 activities. Dispersion modeling isopleths which show the geographic distribution of these impacts are provided in D. Generally, Phase 1 impacts will extend some 400 meters to the north northeast of Phase 1 development. Phase 2 impacts will extend some 350 meters north of Phase 2 development.

Potential localized PM_{10} impacts will be limited to site preparation activities during Phase 1 and Phase 2. These ISC modeled potential impacts are based on a set of conservative assumptions that incorporate worst-case 1981 SCAQMD mandated meteorological conditions and maximum daily PM_{10} emissions occurring every day throughout the entire modeled year. Therefore, if site preparation activities during Phase 1 occurred for the entire year, although they are expected to occur only for 86 days, at the maximum rate of activity, the model predicts that one day out of 365 days an off-site PM_{10} concentration could be as high as 18 $\mu g/m^3$.

Similarly, if site preparation activities during Phase 2 occurred for the entire year, although they are expected to occur only for 84 days, at the maximum rate of activity, the model predicts that one day out of 365 days an off-site PM_{10} concentration could be as

Table 17

LOCAL AIR QUALITY CONSTRUCTION IMPACTS (MITIGATED)

Pollutant	Maximum Increase in Ambient Concentrations for Off-Site Sensitive Receptors During Project Development[a]			
	Phase 1	Phase 2	Phase 3	Phase 4
PM_{10} (24-hour)	18.1	19.9	3.6	2.5
Maximum Concentration Increase ($\mu g/m^3$)	7.7	10.4	10.4	10.4
Threshold ($\mu g/m^3$)	26.4	9.5	(6.8)	(7.9)
Over/(Under) Adverse Concentration	Yes	Yes	No	No
NO_2 (1-hour)	110	32	32	28
Maximum Concentration Increase ($\mu g/m^3$)	207	207	207	207
Threshold ($\mu g/m^3$)	(97)	(175)	(175)	(179)
Over/(Under) Adverse Concentration	No	No	No	No
CO (1-Hour)	565	218	218	196
Maximum Concentration Increase ($\mu g/m^3$)	11,500	11,500	11,500	11,500
Threshold ($\mu g/m^3$)	(10,935)	(11,282)	(11,282)	(11,304)
Over/(Under) Adverse Concentration	No	No	No	No
CO (8-Hour)	211	74	74	39
Maximum Concentration Increase ($\mu g/m^3$)	3,674	3,674	3,674	3,674
Threshold ($\mu g/m^3$)	(3,463)	(3,600)	(3,600)	(3,635)
Over/(Under) Adverse Concentration	No	No	No	No

[a] *Maximum impacted off-site receptor occurs at single-family residential uses north of the project site along Carson Street.*

Source: PCR Services Corporation, 2004.

high as 20 $\mu g/m^3$. In addition, these off-site impacts will be less severe as site preparation activities move from the northern portion of the project site towards the more central and southern portions of the project site.

Local CO concentrations as a result of project-related traffic and emissions of air toxics are not forecast to be significant for the project.

As discussed in Table 15 on page 267, the project's growth rate in terms of the number of residents and the number of employees exceeds the project's growth rate in the number of vehicle trips when compared to the regional average assumptions upon which the SCAQMD's AQMP are based. Therefore, fewer mobile emissions will be produced by project residents and employees than those accounted for in emission forecasts in the

AQMP.[83] Nevertheless, implementation of the project even with incorporation of mitigation measures will result in an increase in emissions which will contribute to region-wide emissions on a cumulative basis and as such, the project's contribution to cumulative air quality impact is concluded to be significant and unavoidable.

Based on the analysis above, the project will meet the criteria specified by the SCAQMD which are used to determine consistency with applicable SCAQMD and SCAG policies. The project will also be consistent with the various policies set forth in the Air Quality Elements of the Cities of Long Beach and Lakewood General Plans. The project will therefore be consistent with adopted air quality plans and policies and a less-than-significant impact will occur.

[83] *Based on the SCAQMD's significance threshold, a project will have a significant cumulative air quality impact if the ratio of daily project vehicle miles traveled to daily countywide vehicle miles traveled exceeds the ratio of daily project employees to daily countywide employees or if it exceeds the ratio of project population to countywide population.*